

<b>Course number</b>		U-LAS61 10021 LE14					
<b>Course title (and course title in English)</b>		Climate Change and Human Activities-E2 : Introduction to Humanosphere Climate Change and Human Activities-E2 :Introduction to Humanosphere		<b>Instructor's name, job title, and department of affiliation</b>		Research Institute for Sustainable Humanosphere Professor,Luce , Hubert	
<b>Group</b>		Interdisciplinary Sciences		<b>Field(Classification)</b>		Environmental Sciences	
<b>Language of instruction</b>		English		<b>Old group</b>		<b>Number of credits</b> 2	
<b>Number of weekly time blocks</b>		1		<b>Class style</b> Lecture (Face-to-face course)		<b>Year/semesters</b> 2025 • First semester	
<b>Days and periods</b>		Fri.4		<b>Target year</b> Mainly 1st & 2nd year students		<b>Eligible students</b> For all majors	
<b>[Overview and purpose of the course]</b>							
<p>Knowledge of the Earth's past climates and understanding the mechanisms responsible for their variations are crucial to a better understanding of current climate change. The aim of this course is to provide students with the knowledge necessary to discuss the mechanisms of climate change and the possible societal and environmental impacts of climate change using historical examples. The course will focus on: (1) known past changes in the Earth's climate and the natural mechanisms responsible for these changes, (2) current climate change and how its causes differ significantly from past events, (3) historical examples of the impact of climate disruption on human civilisations and societies during the Holocene and contemporary history, (5) possible future impacts of current climate change on human society and its environment (i.e. the humanosphere).</p>							
<b>[Course objectives]</b>							
<p>In this lecture, students will learn about the Earth's past climates and their possible causes. They will also learn about the importance of climatic hazards to human civilisations and societies. They will be given some tools to assess the possible societal impacts of current climate change on the humanosphere through the description of historical and recent climate disruption events. The lecture will also address issues related to the United Nations Sustainable Development Goals (SDG13: Climate Action).</p>							
<b>[Course schedule and contents)]</b>							
<p>1. (Week 1-2)</p> <ul style="list-style-type: none"> <li>- An overview of present-day climate conditions</li> <li>- Importance of Studying Past Climates: Reasons for studying historical climate patterns, including understanding long-term changes and improving prediction models.</li> </ul> <p>2. (Weeks 3-5)</p> <p>Natural and anthropogenic causes of climate change</p> <ul style="list-style-type: none"> <li>- Natural Causes: <ul style="list-style-type: none"> <li>o Solar activity</li> <li>o Milankovitch cycles</li> <li>o Volcanic activity</li> <li>o Continental drift</li> <li>o Albedo effects</li> <li>o Greenhouse gas concentrations</li> <li>o Internal climate variability</li> </ul> </li> </ul>							
<div> <div></div> <div>Continue to Climate Change and Human Activities-E2 :Introduction to Humanosphere(2)</div> </div>							

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- Anthropogenic Causes:
    - o Greenhouse gas emissions
    - o Deforestation

3. (Week 6)

The importance of the feedback loops and tipping points in climate change.

4. (Week 7-8)

Past Climates:

- How we collect evidence about past climate (methods)
- The Evolution of Earth ' s Atmosphere: From primitive conditions to the present.
- Major Ice Ages: Overview of significant ice ages and their possible natural causes.

5. (Week 9-10)

The Holocene Epoch:

- Climate changes during the Holocene and their effects on early human societies and civilizations.

7. (Week 11-12)

Societal Impacts of Climate Disruptions Since Medieval Times:

- Examination of how climate events affected economies and societies in Europe, America, and Japan.

8. (Week 13-14)

Lessons from the Past on Current Climate Change Impacts

- Assessing potential societal instabilities
- Strategies for mitigation and adaptation.

9. (Week 15)

Final Examination

10. (Week 16)

Feedback

**[Course requirements]**

This lecture only requires scientific backgrounds in natural sciences of high school levels

**[Evaluation methods and policy]**

Evaluation will be:

Active participation in class: 20 pts

Assignments/projects at home: 40 pts

Final examination: 40 pts

**[Textbooks]**

There is no specific textbook for this course. Its content will be based on multiple references (books, websites) that will be mentioned during the course.

**[References, etc.]**

( References, etc. )

Introduced during class

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**[Study outside of class (preparation and review)]**

Course materials are made available before class.

Students are encouraged to study the materials before and after each class in order to assimilate technical or uncommon words.

Depending on the topic, the study of the lecture and the preparation of the report for the assessment may take several hours per week.

**[Other information (office hours, etc.)]**

Lecture materials will be made available on the KULASIS website. Communication by e-mail is possible for questions outside school hours.